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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/657,449	09/08/2003	Peter L. Kellerman	03-IMP-001	1462
29393	7590	08/11/2004	EXAMINER	
ESCHWEILER & ASSOCIATES, LLC NATIONAL CITY BANK BUILDING 629 EUCLID AVE., SUITE 1210 CLEVELAND, OH 44114			BENENSON, BORIS	
			ART UNIT	PAPER NUMBER
			2836	

DATE MAILED: 08/11/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No. 10/657,449	Applicant(s) KELLERMAN ET AL.	
	Examiner Boris Benenson	Art Unit 2836	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>9/08/03</u> . | 6) <input type="checkbox"/> Other: _____ |

Handwritten initials

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Detailed Actions

Specification

1. The disclosure is objected to because of the following informalities:

In Related Applications section of the Disclosure, named Related Applications, Serial Numbers is blank.

A term "inertial response time" is not disclosed.

Examination will be based on a general understanding of term "inertia" described as "a property of a matter by which it remains at rest or in uniform motion in the same strait line unless acted upon by some external force" (Merriam-Webster's Collegiate Dictionary).

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 1-20 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the

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art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Claims contain a term "inertial response time". Such term has not been defined in the Specification and therefore the Claims are not enabled.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 15 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Meaning of "process throughput specification" is indefinite.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior

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art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1-3, 6-8, 13,18 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bates (5,754,391) in view of Horwitz (5325261). Bates disclosed an Electrostatic Chuck wherein a semiconductor wafer is placed on a top dielectric plate (Fig.1, Pos. 20) located above an electrode (16). "A gas source 22 is coupled to a central fluid manifold 29 formed by fluid passageways 28, 38 of the top and bottom dielectric plates 14, 20" (Col.4, Lines 52-54). A power source (26) is coupled to the electrode through an electrical lead (30). "The particular amount of charge, which determines the magnitude of the clamping force, is dependent upon the thickness of the dielectric material, the dielectric material's dielectric constant, the spacing of the vacuum gap between the wafer and the dielectric, and the clamp voltage" (Col. 8, Lines 25-29). "Once processing is complete the power source 26 is turned off to cessate the application of power to the electrode 16. This substantially instantaneously releases the semiconductor wafer W from the electrostatic chuck 20" (Col. 8, Lines 50-53). Bates didn't disclose particulars of the clamp voltage, but indicates, "The power source 26 can be either an AC or a DC power source depending upon the particular processing environment" (Col.9,

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Lines 8-9). Horwitz teaches an Electrostatic Chuck With Improved Release. Horwitz teaches that "ac field excitation can reduce the value of surface charge to a low value" (Col. 2, Lines 60-61) and that use of "a less abrupt waveform (e.g., a sine wave)" will "also results in brief periods every half-cycle when the wafer is not held, and so is able to move under the influence of other forces such as gas pressure, centrifugal forces and inertia/gravity" (Col. 2, Lines 28-36). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the Electrostatic Chuck of Bates and employ a square wave clamping voltage, because an abrupt square wave will minimize the period when the wafer is not held. It also would have been obvious to take into consideration inertial characteristics of the wafer during a process of determination parameters of the square wave (such as a frequency, a duty cycle and a rise/fall time) so the rise/fall time will be shorter than the wafer inertial response time.

Contact information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Boris Benenson whose telephone number is (571) 272-2048. The examiner can normally be reached on M-F (8:20-6:00) First Friday Off.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Sircus can be reached on (571) 272-2800 x 36. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Boris Benenson
Examiner
Art Unit 2836

B.B.



**BRIAN SIRCUS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800**